FIG. 3.

Ambulances.
2 Sheet
No 1
No 516 Mar. 8, 1855
296/16

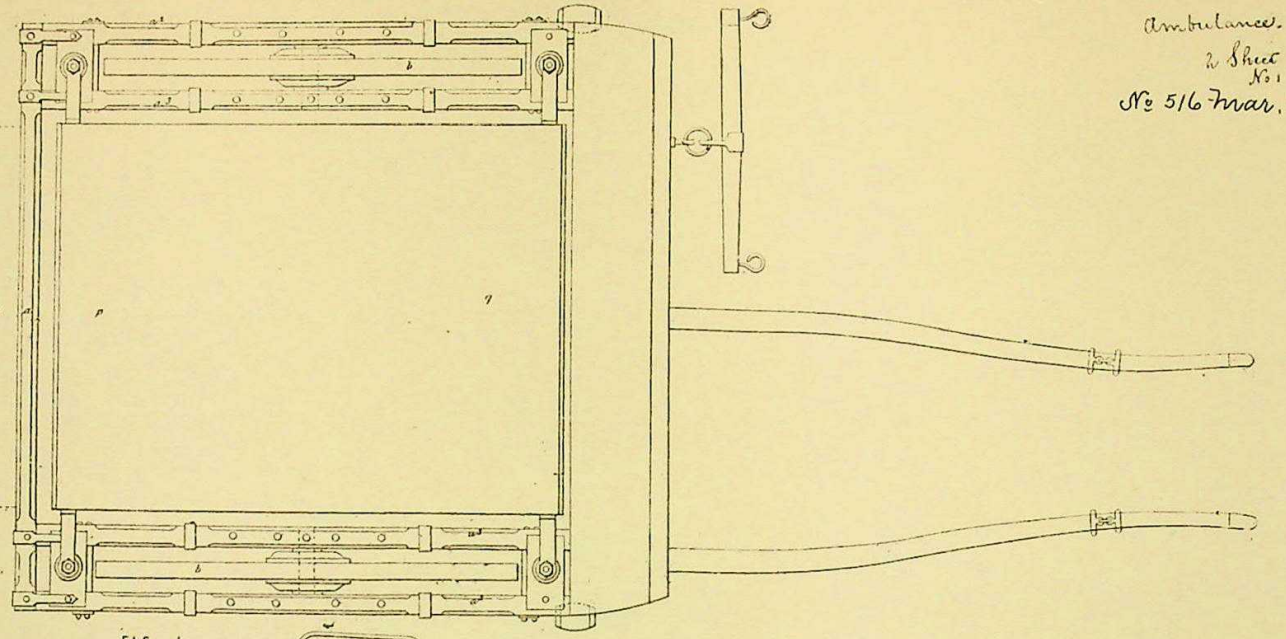

FIG. 1.

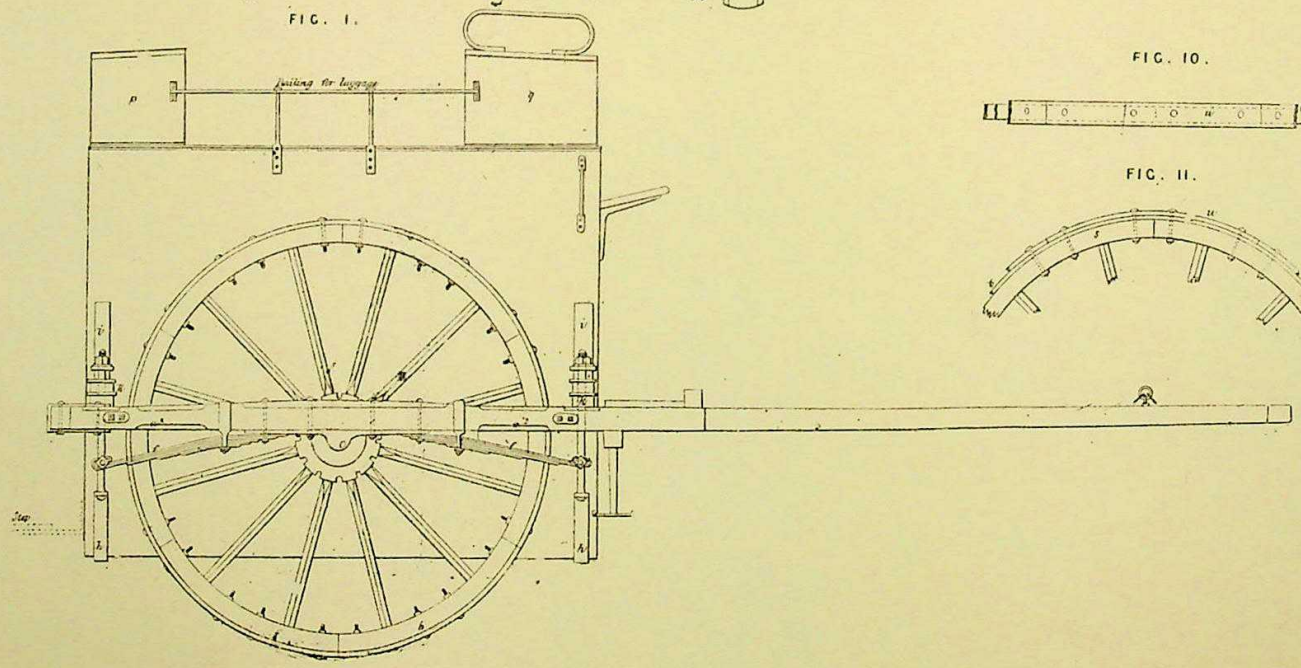

FIG. 10.

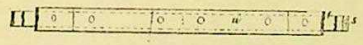

FIG. 11.

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FIG. 2.

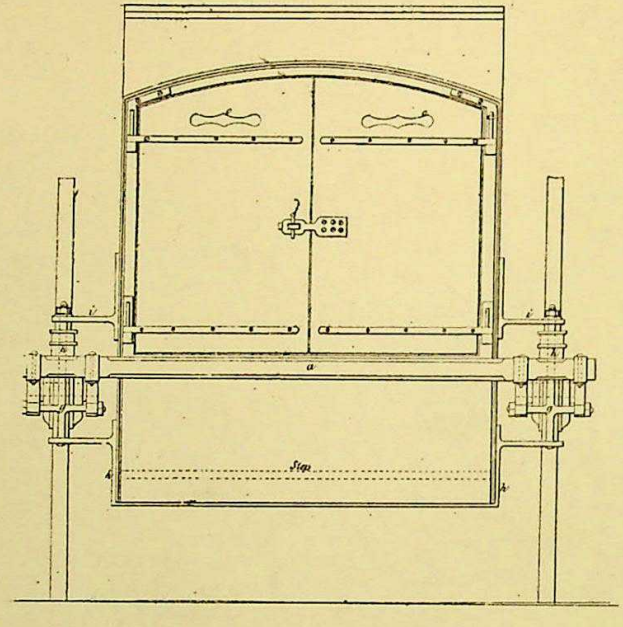

FIG. 4.

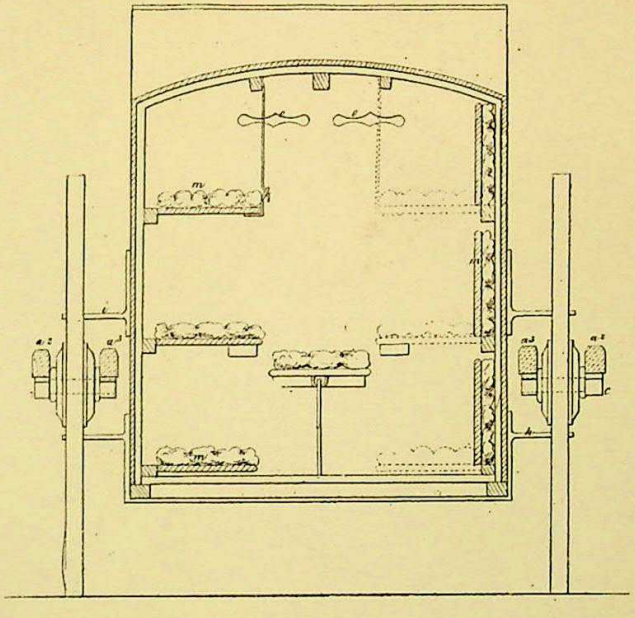

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FIG. 5.

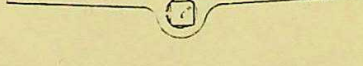


FIG.

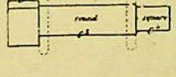
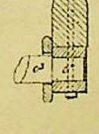


FIG. 7.

FIG. 8.

FIG. 9



A.D. 1855 . . . . . N° 516.

Carriages, and Wheels for the same.

LETTERS PATENT to George Hazeldine, of Lant Street, Southwark, in the County of Surrey, Coach Maker, for the Invention of "IMPROVEMENTS IN WHEEL CARRIAGES, AND IN THE WHEELS THEREOF."

Sealed the 31st August 1855, and dated the 8th March 1855.

PROVISIONAL SPECIFICATION left by the said George Hazeldine at the Office of the Commissioners of Patents, with his Petition, on the 8th March 1855.

I, GEORGE HAZELDINE, do hereby declare the nature of the said Invention for "IMPROVEMENTS IN WHEEL CARRIAGES, AND IN THE WHEELS THEREOF," to be as follows:—

This Invention consists in constructing wheel carriages & the wheels thereof as herein-after stated, viz., these carriages are mounted on wheels, each of which rotates on a separate short axle of its own, such axle being a fixed pivot or centre that does not turn, whilst the wheel turns upon it, whereby I dispense with the iron arms or axle running through both wheels as at present. I also construct a framing in which the said short axles are fixed, such framing being distinct from the body of the vehicle, although surrounding the body of the vehicle and attached thereto, whereby I am enabled to place the body of the carriage itself between such wheels, much lower and nearer the ground than could otherwise be done, except by the use of cranked

axles, which are expensive and objectionable; and I purpose applying the same to carriages of any number of wheels for common roads or railways.

When I apply this Invention to ambulance carriages I fit the inside of the body with moveable bedsteads and other conveniences for carrying the wounded. The wheels for travelling on soft ground I construct with tires broader than the felloes of the wheel, made in parts somewhat similar to the felloes, and bolted thereto.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said George Hazeldine in the Great Seal Patent Office on the 7th September 1855.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, GEORGE HAZELDINE, of Lant Street, Southwark, in the County of Surrey, Coach Maker, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Eighth day of March, in the year of our Lord One thousand eight hundred and fifty-five, in the eighteenth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said George Hazeldine, Her special licence that I, the said George Hazeldine, my executors, administrators, and assigns, or such others as I, the said George Hazeldine, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN WHEEL CARRIAGES, AND IN THE WHEELS THEREOF," upon the condition (amongst others) that I, the said George Hazeldine, by an instrument in writing under my hand and seal, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said George Hazeldine, do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The nature of my Invention, which has already been intimated generally

by the Provisional Specification filed on application for the said Letters Patent, is hereby, in compliance with the said condition therein contained, fully and particularly described and ascertained as follows, viz.,—

(I.) Distinct from the body of the vehicle I form a horizontal framing, which rests upon the axles of the wheels without the intervention of springs, such axles being short axles, one for each wheel, and formed as a fixed centre that does not itself rotate, whilst the wheel turns upon it, whereby I dispense with the use of bearings or journals for the said axles to turn in or upon, as is ordinarily the case when short axles are employed. The body of the vehicle, which is encompassed (or it may be nearly encompassed only) by the said framing, and rests upon or is suspended from it by means of half springs, can thus be brought much lower and nearer the ground than is generally done without the use of cranked axles, which are subject to such considerable vibration and great weight, with consequent augmentation of the chances of breakage, which by the adoption of this Invention are avoided or greatly reduced. As regards ambulance or hospital carriages for soldiers, &c. to which this Invention is especially applicable, I would add that I not only adopt the said wheels and axles and attach the carriage thereto as aforesaid, but I likewise arrange and fit up the interior thereof with moveable bedsteads, and other conveniences, as hereafter described. And in order to enable wheel carriages arranged and constructed as described, to travel with facility on soft ground, I construct the wheels thereof with additional removable tyres broader than the felloes of such wheels, said tyres being made in parts somewhat similar to the felloes, and bolted on or securely attached thereto, and, if need be, easily and readily detachable therefrom.

(II.) Having thus particularly described and ascertained the nature of the said Invention, I now proceed in further compliance with the aforesaid condition in the said Letters Patent to me granted, to particularly describe and ascertain in what manner the same is to be performed or put in practice, wherein I shall refer to the accompanying Drawings by the words, figures, and letters placed thereon and herein referred to, as follows, viz. :—

Description of the Drawings.

Fig. 1 is a side elevation, Fig. 2 a back elevation, Fig. 3 a plan view, and Fig. 4 a transverse section, shewing more particularly the interior construction and arrangement of the body of the cart. a, a^2, a^3, are several parts constituting the main framing of the vehicle, which it will be observed is double on either side so as to admit the wheels b, b, between the outer frames a^2 and the inner frames a^3, though the hind transverse part of the framing might in

some cases be removable or be dispensed with altogether, taking care to give the sides of the framing sufficient support in connecting the ends thereof to the body, (as, for instance, by the use of the parts *i*, *i*, *g*, *g*, *k*, *k*, hereafter described. *c*, *c*, are the short axles extending between the outer and inner frames, and firmly fixed to and underneath them as follows, that is to say, each axle is forged or made, as shewn on a larger scale in the Figures 5 and 6, with a plate or projection c^2 for bolting through it and up to the outer frame. The part c^3 on which the wheel turns is round, and the part c^4 is square, and fits into a corresponding plate *d*, which has a similarly shaped socket or hole in it, see Figs. 7 and 8, and is placed beneath and bolted to the inner frame, a central bolt likewise passing through the part c^4, as shewn in the Figure 9, by which arrangements the wheel is prevented coming off, except taken off by the use of a spanner or key, for which purpose a hole is provided in the side of the vehicle near the axle, so as to allow the hand to pass through and turn the same. Beneath and up to each of the outer frames, and also each of the inner frames, are bolted and strapped a pair of half springs *f*, *f*, on which the body of the carriage rests by means of the cross irons *g*, *g*, which are connected with the body by long straps *h*, *h*, as shewn. *i*, *i*, are guiding or steadying irons, fixed to the body, and fitting over and sliding upon the upright parts of the cross irons *g*, *g*, so as to keep the body in its proper position. *k*, *k*, are additional springs, constructed of vulcanised indian-rubber according to Fuller and De Bergue's Patent, which are brought into action when the springs *f*, *f*, are put to a severe strain, or in the event of their accidentally breaking; and in such cases the guiding irons *i*, *i*, take the weight by resting upon the vulcanised india-rubber springs. The shafts of the vehicle are run into sockets in the frame and secured there by a bolt passing through them. For the convenience of travelling on soft ground, I construct the wheels of the vehicle with the broad additional tyres above referred to, and hereafter described with reference to the accompanying Drawing.

Deeming the foregoing to be a sufficient description of my Invention as applicable to vehicles generally, I will now describe its particular adaptation to the purposes of an ambulance cart as I have represented it in the Drawing. The interior is fitted with a number of rising and falling beds or cushions *m*, *m*, which are capable of being turned up on their hinges when not required, as explained by the Figure 4. *n* is a seat for the doctor or attendant. *o*, *o*, are ventilating openings made respectively in the front and in the doors at the back of the body of the vehicle, see Figures 2 and 4. *p* and *q* are a doctor's store box, and a cistern, fixed on the top of the body of the vehicle at the back and front respectively. The hinges which fasten the doors on

to the back of the vehicle are hung on long pins *, *, provided with stops $*^2$, $*^2$, in order to allow the doors to be raised, so as to open the doors whenever by reason of the weight carried their bottom edges may have become depressed below the framing *d*.

As aforesaid, I construct for facilitating travelling on soft ground an additional tyre of increased breadth, which I fit on to and upon the ordinary tyre, as shewn in the Figures 10 and 11. *s* is the felloe of the wheel, *t* the ordinary tyre, and *u* the exterior broad tyre, which I make in segments and bolt on in the manner shewn. But it is worthy of mention that in order to the ready adaptation of this additional tyre where required, the inner or ordinary tyre should be bolted on to instead of being rivetted to the felloe, as is usually the case; or the tyre *u* may be fastened on and be more readily removable by means of bolts passing through same at the sides of the ordinary tyre and felloes, and through a coupling under the felloes and secured by nuts. The above arrangements will also afford good temporary repair in the event of breakage of the inner or ordinary tyre. Although the Drawing shews the Invention applied to a two-wheeled vehicle with peculiar interior arrangements, it is obvious that the same is applicable to vehicles with more wheels than two, and to vehicles differently arranged.

(III.) Having now particularly described and ascertained the nature of my said Invention, and in what manner the same is to be performed, I declare that I do not claim the particular mechanical details herein set forth and described, except as constituent parts of the said improvements in wheel carriages and the wheels thereof; what I claim being the Invention, the nature and character whereof is set forth and described in the outset (I.) of this my Specification thereof.

In witness whereof, I, the said George Hazeldine, have hereunto set my hand and seal, this Seventh day of September, in the year of our Lord One thousand eight hundred and fifty-five.

GEO. HAZELDINE. (L.S.)

Signed and sealed in my presence,

F. W. CAMPIN,

Patent Agent,

156, Strand.

LONDON:

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